CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO: 90-062

SITE CLEANUP REQUIREMENTS FOR:

PAUL MUNROE HYDRAULICS, INC. AND T&M JOINT VENTURE NO.3
FOR THE PROPERTY LOCATED AT:
3701 Thomas Road
Santa Clara
Santa Clara County

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. SITE DESCRIPTION Paul Munroe Hydraulics operates a mobile hydraulic equipment repair and manufacturing facility located at 3701 Thomas Road in Santa Clara, between highway 101 and Montague Expressway (Figure 1). Soil and groundwater at this site are polluted with organic solvents and petroleum hydrocarbons.

2. REGULATORY STATUS Paul-Munroe Hydraulics, Inc. (PMH), is referred to as a discharger because of their occupancy of the site since 1980 and use of the chemicals detected onsite in soil and groundwater. PMH leases the site from T&M Joint Venture No. 3, the current site owner. T&M Joint Venture No.3 is hereinafter referred to as a discharger because of current ownership of the site and will be responsible for compliance with this Order in the event that PMH fails to comply with the requirements of this Order.

3. SITE HISTORY PMH maintained a 500 gallon capacity, below grade, concrete oil separation tank. Typical operation of this separator involved the drainage and collection of spent hydraulic fluid and wash down chemical products from vehicles under repair at the subject facility. During removal of the tank in October 1986, it was observed to be cracked in several locations. No spills have been reported on this site in the past.

4. SITE GEOLOGY AND HYDROGEOLOGY The site is located on the bayland plain between Guadalupe River and San Thomas Aquino Creek. Shallow alluvial soils at the site consist primarily of clays and silts of low to high plasticity and unconsolidated fine to medium grained sands and silty sands. Approximately 20 feet below ground surface, medium to high plasticity silty clay was encountered.

The shallow groundwater zone appears to be laterally continuous across the site. Ground water flows, in general, south to north under the site at an approximate hydraulic gradient of 0.4%. This flow direction is essentially toward the San Francisco Bay and is consistent with the regional ground water flow direction for the area. Permeability values estimated from a well recovery test are $1x10^{-3}$ cm/sec to $5x10^{-3}$ cm/sec, with an assumed effective porosity for the aquifer materials of 45% to 30%. The average ground water velocity is estimated at 10 ft/yr to 60 ft/yr.

5. SITE INVESTIGATION An initial site investigation to determine the extent of soil pollution and to evaluate whether groundwater had been affected by site activities was begun in October 1986 with the removal of the cracked separator tank. Analytical results of a soil sample taken from the bottom of the excavation showed elevated concentrations of ethylbenzene (65 ppb), trichloroethene (2100 ppb) , toluene (900 ppb), tetrachloroethene (110 ppb), and total hydrocarbons as waste oil (3400 ppm). At the time of excavation the water table was at approximately 8 feet below surface and since has dropped 1 to 2 feet.

In May 1987 PMH drilled six soil borings, three of which were completed as monitoring wells (Figure 2). Results of soil sample analyses demonstrated up to 8,300 ppm total Oil and Grease, up to 410 ppb TCE, 36 ppb PCE and 18 ppb toluene. Results of ground water sample analyses revealed up to 16 ppm of total Oil and Grease, 9 ppb TCA, 460 ppb TCE, 63 ppb 1,1- DCA and 11 ppb 1,2-DCA. No PCE was detected.

PMH performed a soil gas survey in September 1988, to delineate the extent of groundwater pollution and select locations for proposed monitoring wells. Based on the a soil-gas survey results, three additional monitoring wells were installed: MW-4, MW-5 and MW-6 (Figure 3).

In April 1989, PMH conducted two supplemental investigations consisting of soil probe groundwater sampling and well sampling. Results of these supplemental tasks indicate that there also appears to be, in addition to the tank, an onsite source for groundwater pollution. The analytical results from the groundwater samples detected 2,600 ppb of TCE, up to 210 ppb 1,1-DCE, 31 ppb 1,1-DCA, 8 ppb 1,2-DCA in well MW-4, and 320 ppb TCE in MW-5 which indicates there may be an offsite source of pollution of groundwater. Further investigation is required to confirm the offsite source.

In September, 1989 PMH performed soil probe groundwater sampling in the vicinity of an underground drainage pipe and the former storage tank in order to further characterize the sources of groundwater pollution. Results of the groundwater probe sampling confirms the presence of VOCs in groundwater (TCE at 2400 ppb, 1,1-DCE at 170 ppb) onsite but does not appear that the drainage pipeline located in the parking lot is a potential source of groundwater pollution.

6. INTERIM SOIL AND GROUNDWATER REMEDIATION An initial site interim remedial action was begun in October 1986 with the removal of the cracked separator tank. At that time, a limited amount of soil (approximately 7 cubic yards) was removed from the tank pit. In May and June 1988 during additional excavation of the separator tank pit, all visibly polluted soils were removed from the tank pit. Total volume of polluted soils removed during all phases of excavation was approximately 302 cubic yards. To date there has been no interim remedial action taken towards groundwater.

7. PLUME MIGRATION Polluted soil remaining onsite poses a potential point source for further groundwater pollution. The groundwater pollution plume has neither been fully defined nor contained and may have already migrated offsite. Should the plume fully migrate under the Montague Expressway one would expect severe difficulty in establishing a monitoring or remediation system in this area.

8. SCOPE OF THIS ORDER Based on the field and analytical work conducted at the PMH site since 1987, it appears that groundwater has been polluted in the area north and northeast of the PMH building and that elevated levels of pollutants remain in the soil beneath the site, possibly in more than one location. The tasks in this Order are necessary to alleviate the threat to the environment posed by further migration of the existing soil and groundwater pollution, and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup actions. Additional site characterization is necessary to further define sources of pollution and the horizontal and vertical extent of soil and groundwater pollution.

9. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for south San Francisco Bay and contiguous surface and ground waters.

10. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:

    a. industrial process water supply
    b. industrial service water supply
    c. municipal and domestic water supply
    d. agricultural water supply

11. The dischargers have caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

12. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

13. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the site, and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

14. The Board, in a public meeting heard and considered all comments pertaining to the Site.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

4. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

B. SPECIFICATIONS

1. PMH shall conduct site investigations and monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of plume migration, additional plume characterization shall be required. Within 60 days of the Executive Officer's determination and actual notice to T&M Joint Venture No.3 that PMH has failed to comply with this Order, T&M Joint Venture No. 3, as landowner, shall comply with this Order.

2. The cleanup goal for polluted soils is 1 ppm for total VOCs. If soil is not cleaned up to background values, then an estimate of the potential for release of constituents to groundwater shall be quantified with site specific data. The 1 ppm cleanup goal may be modified by the Executive Officer if the dischargers demonstrate with site specific data that higher levels of VOCs in the soil will not threaten the quality of waters of the State or that cleanup to this level is infeasible and human health and the environment are protected. If any chemicals are left in the soil some follow up groundwater monitoring will be required.

3. Final cleanup levels and goals for polluted groundwater shall be background water quality if feasible, but shall not be greater than the DHS drinking water Action Level (AL) or Maximum Contaminant Level (MCL), whichever is more stringent. If an AL or MCL has not been established, the level shall be in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", based on an evaluation of the cost, effectiveness and a risk assessment to determine affect on human health and the environment. Final cleanup levels for groundwater shall be approved by the Board. State Board Resolution 88-63 definition of sources of drinking water may be applied in determination of final cleanup goal. These levels shall have a goal of reducing the mobility, toxicity, and volume of pollutants. An upgradient source of offsite pollution may exist.

4. The dischargers shall optimize reclamation of any groundwater extracted as a result of cleanup activities, with a goal of 100% reuse, or pursue discharge to a local Publicly Owned Treatment Works. The dischargers shall not be found in violation of this Order if documented factors beyond the dischargers' control prevent them from attaining this goal, provided they have made a good faith effort to attain this goal.

C. PROVISIONS

1. The discharger shall comply with the Prohibitions and Specifications of this Order in accordance with the following tasks and time schedules:

TASKS AND COMPLETION DATES

a. TASK: SAMPLING AND ANALYSIS PLAN FOR MONITORING WELLS

Description: Submit a technical report acceptable to the Executive Officer containing a site Sampling and Analysis Plan for regular sampling of all monitoring wells. The plan shall be based upon quarterly sampling and shall describe sampling, chain-of-custody and transport procedures, QAQC, and analytical methods. Groundwater samples shall be analyzed for VOCs using EPA 8240 Open Scan once for all existing wells and initially for all new wells, followed by an appropriate 8000 series method. All wells shall also be analyzed at least once for EPA Priority Metals.

COMPLETION DATE: JUNE 30, 1990

b. TASK: INVESTIGATION OF OFFSITE SOURCES OF GROUNDWATER POLLUTION

Description: Submit a technical report acceptable to the Executive Officer containing the results of an investigation to determine if possible upgradient sources are contributing to groundwater pollution beneath the Paul Munroe site. The report shall better define the groundwater gradient at the site as well as further evaluate the validity of concentration of pollutants found in monitoring well MW-5. The discharger shall sample and analyze soils as well as continuously core any additional upgradient monitoring wells.

COMPLETION DATE: AUGUST 31, 1990

c. TASK: WORK PLAN FOR ADDITIONAL SITE INVESTIGATION

Description: Submit a technical report acceptable to the Executive Officer containing a workplan for additional site investigation to further define the vertical and lateral extent of onsite and offsite soil and groundwater pollution. The workplan shall also include a time schedule for additional investigation.

COMPLETION DATE: NOVEMBER 30, 1990

d. TASK: RESULTS OF ADDITIONAL SITE INVESTIGATION

Description: Submit a technical report acceptable to the Executive Officer which discusses the results of the additional site investigation pursuant to the work plan described in task "c" to include at least the following:

- summary of geology and hydrogeology

- definition of lateral and vertical extent of soil and groundwater pollution

- summary of all interim actions for soil and groundwater including an evaluation of effectiveness of interim remedial actions

- results of the additional site investigation

- an evaluation of then stalled interim remedial measures.

- proposal for additional interim remedial measures, if warranted, for soil and groundwater and an implementation schedule and evaluation of interim actions shall consider an alternative hydraulic control system to contain and initiate cleanup of polluted groundwater particularly downgradient movement of the groundwater pollution plume to beneath and beyond Montague Expressway.

  If extraction of groundwater is an element of the proposed interim action, this report shall also evaluate the reinjection, re-use or disposal to the sanitary sewer of the extracted groundwater. If an alternative means of groundwater disposal are demonstrated to be impractical or infeasible then the report should include a completed NPDES application for a permit to discharge to surface water, if such discharge is part of the plan.

COMPLETION DATE: MARCH 31, 1991

e. TASK: IMPLEMENTATION OF INTERIM REMEDIAL MEASURES

Description: If interim remedial measures are proposed, submit a technical report acceptable to the Executive Officer documenting completion of implementation of interim soil and/or groundwater remedial measures.

COMPLETION DATE: 90 DAYS AFTER IMPLEMENTATION DATE STIPULATED IN REPORT OF TASK 1.d.

f. TASK: PROPOSE FINAL CLEANUP OBJECTIVES AND ACTIONS

Description: Submit a technical report acceptable to the Executive Officer containing a feasibility study evaluating alternative final soil and groundwater remedial measures and proposed final cleanup objectives for soil and

groundwater. A possible upgradient source of groundwater pollution may exist and must be verified. Should an offsite source of pollution exist this may be considered in setting final cleanup goals. The report shall recommend a final plan and outline the tasks and time schedule necessary for implementation. The final cleanup plan shall be approved by the Board.

COMPLETION DATE: AUGUST 31, 1991

g. TASK: IMPLEMENTATION OF FINAL REMEDIAL MEASURES

Description: Submit a technical report acceptable to the Executive Officer documenting completion of implementation of final soil and groundwater remedial actions.

COMPLETION DATE: 90 DAYS AFTER IMPLEMENTATION DATE STIPULATED IN SCHEDULE OF TASK 1.f.

h. TASK: FIVE-YEAR STATUS REPORT

Description: Submit a technical report acceptable to the Executive Officer containing: 1) results of any site investigative work completed; 2) an evaluation of the effectiveness of installed final cleanup measures to include total pounds of chemicals removed from soil and groundwater; 3) additional recommended measures to achieve final cleanup objectives and goals, if necessary; 4) a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and goals; 5) tasks and time schedule necessary to implement any additional final cleanup measures, 6) recommend measures to reduce Board oversight. If safe drinking levels have not been achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation of the feasibility of achieving drinking water quality with the implemented remedial measures and a proposal for alternative measures if required to achieve drinking water quality.

COMPLETION DATE: MAY 16, 1995

2. All technical reports submitted must be acceptable to the Executive Officer. The submittal of technical reports evaluating remedial measures shall include a projection of the cost, effectiveness, benefits, and impact on public health and the

environment. Remedial investigation and feasibility studies shall consider the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1(c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California"

3. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in the Order, the dischargers shall notify the Executive Officer prior to the deadline for the completion date.

4. The discharger shall submit to the Board acceptable status reports on compliance with the requirements of this Order, and containing results of quarterly groundwater monitoring. Reports shall be submitted on a quarterly basis. The first report shall be for the third calendar quarter of 1990 due on October 31, 1990, with subsequent reports due on the last day of the month following the end of each quarter.

Each report shall contain at least the following:

a. a summary of work completed since the previous status report,
b. a summary tabulation of all well construction data, quarterly groundwater level measurements,
c. cumulative tabulation for all extraction wells of volume of extracted groundwater, chemical analysis results, and pounds of chemicals removed,
d. updated piezometric maps for all aquifers monitored and pollutant isoconcentration map, as applicable,
e. a cumulative tabulation for all soil vapor extraction wells of chemical analysis results and pounds of chemicals removed,
f. identification of any obstacles which may threaten compliance with this Order and what actions are being, or will be, taken to overcome these obstacles, and
g. discussion of events of noncompliance with this Order, including proposed tasks and time schedule to achieve compliance, identified incomplete work that was projected to be complete, and impact of noncompliance on complying with the remainder of this Order.

On an annual basis, technical reports on the progress of compliance with all requirements of this Order shall be submitted, commencing with the report for 1990, due on January 31, 1991. The annual report may be combined with other technical report(s) which are due to be submitted concurrently. The annual report shall include, but is not limited to, an evaluation of the effectiveness of the cleanup action/systems and the feasibility of attaining groundwater and soil cleanup goals.

5. All plans, specifications, reports, and documents shall be signed by or stamped with the seal of a duly licensed geologist, engineering geologist, or professional engineer.

6. All samples shall be analyzed by a State certified laboratory or laboratory accepted by the Board using approved EPA methods for the type of analyses to be performed. All laboratories shall maintain Quality Assurance/Quality Control records for Board review.

7. The discharger shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

8. Copies of all correspondence, reports, and documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. Santa Clara Valley Water District
   b. Santa Clara County Health Department
   c. State Department of Health Services/TSCP
   d. City of Santa Clara

9. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
   b. Access to copy any records required to be kept under the terms and conditions of this Order.
   c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the dischargers.

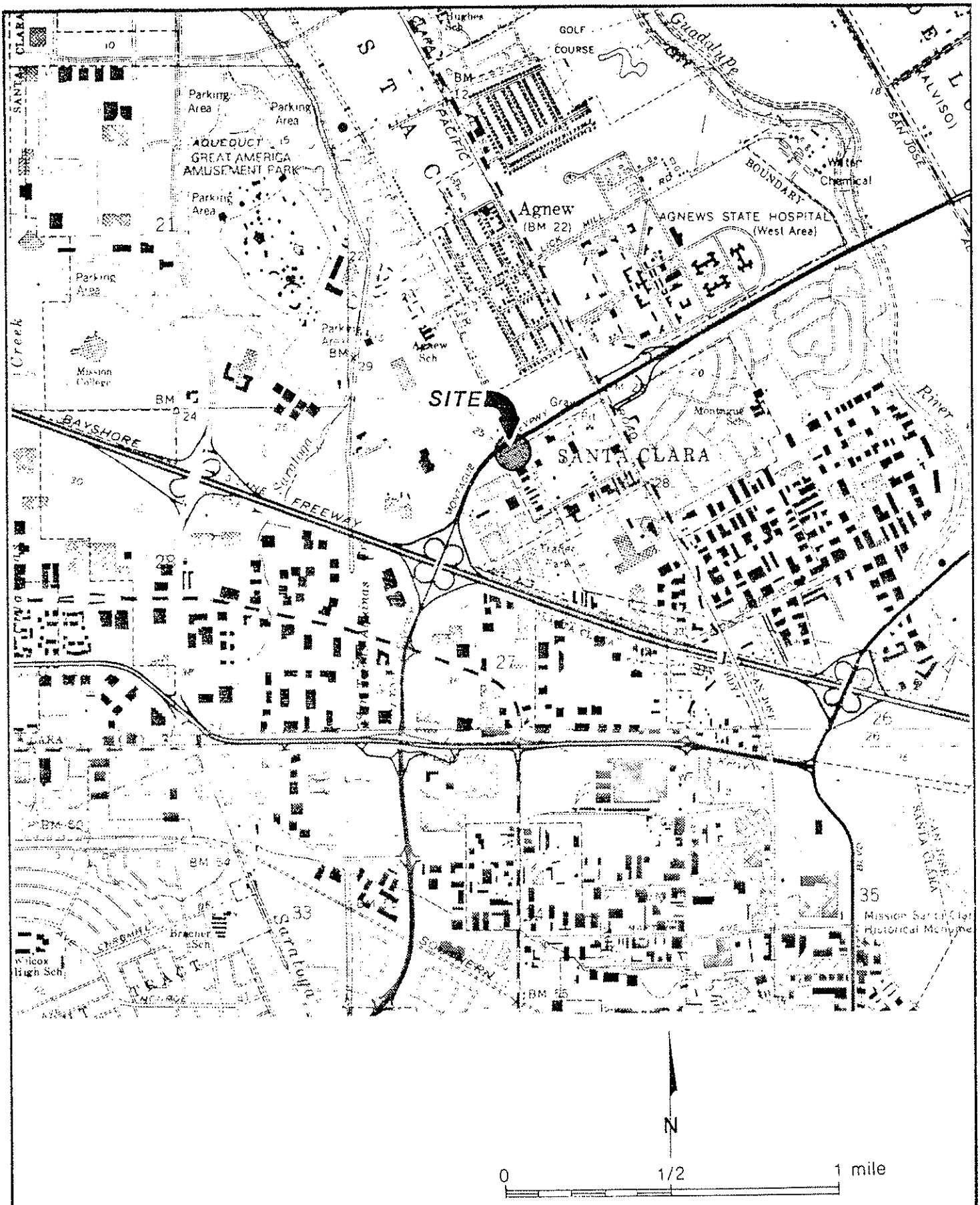
10. If any hazardous substance is discharged to any waters of the state, or discharged and deposited where it is, or probably will be discharged to any waters of the state, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention , Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

11. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of any Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on May 16, 1990.

Steven R. Ritchie
Executive Officer

Attachments: Figure 1 (site map)
Figure 2



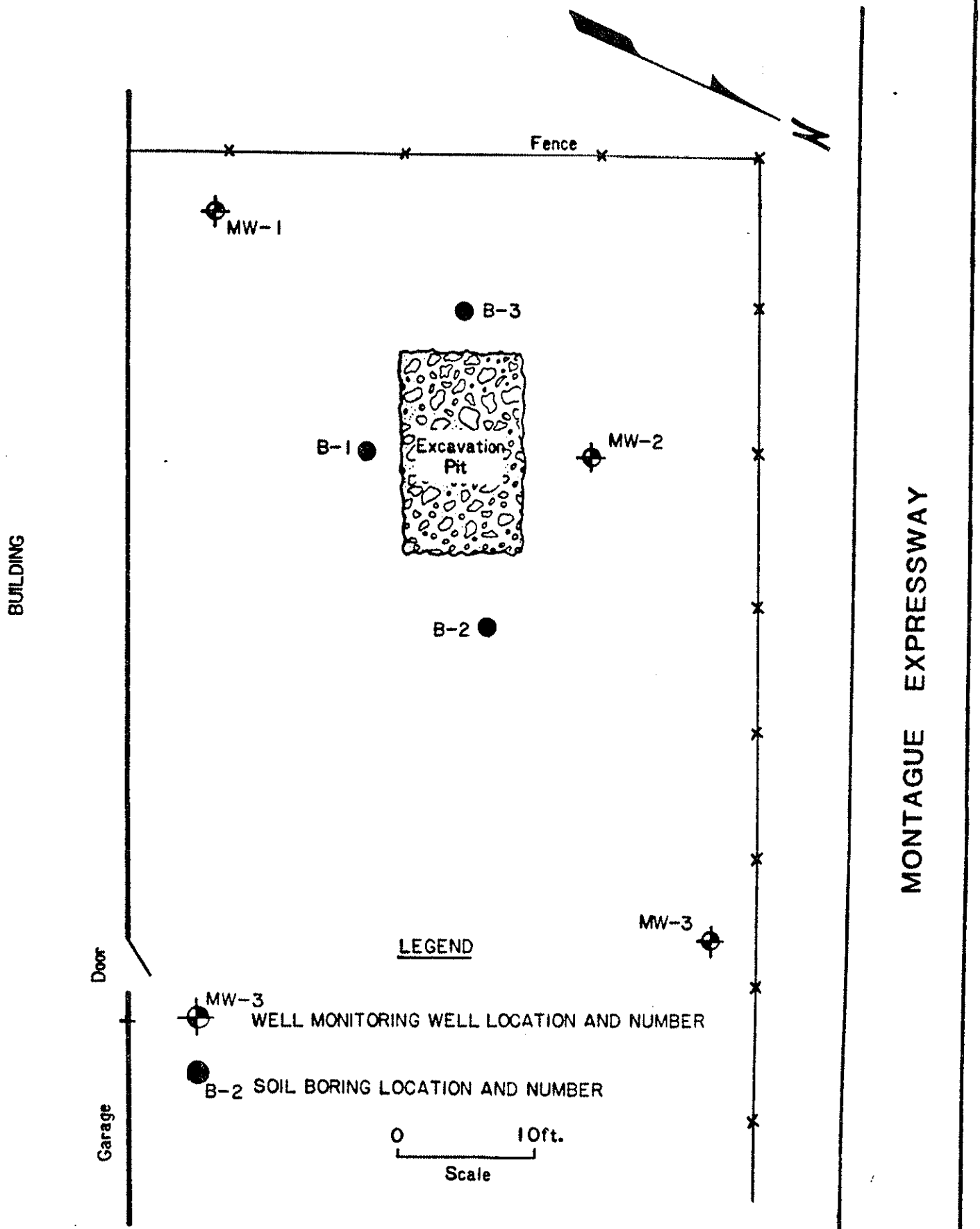
KLEINFELDER

PROJECT NO. 10-1694-04

SITE LOCATION MAP

PAUL MUNROE HYDRAULICS
SANTA CLARA, CALIFORNIA

PLATE
Figure
1



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PROJECT NO. 10-1694-02

PAUL MUNROE HYDRAULICS
3701 THOMAS RD. SANTA CLARA CA.

MONITORING WELL AND BORING LOCATION MAP

~~PLATE~~ Figure 2